

# Ultra Low Sulfur Diesel and Heavy Duty Diesel Engine Rule



**July 11, 2006**

Ambos Nogales Air Quality Task Force

# What is Diesel Fuel?

- Diesel fuel is used mainly in:
  - heavy-duty on-road vehicles (i.e., semi-trucks);
  - Non-road vehicles, (i.e., construction and farm equipment
  - Locomotive and marine uses

# What is Low Sulfur Diesel Fuel?

Low Sulfur Diesel is a fuel that is defined by EPA to have a maximum sulfur content of 500 parts per million (ppm). This is the current standard.



# What is Ultra Low Sulfur Diesel Fuel (ULSD)

ULSD is a clean burning diesel fuel that is defined by EPA to have a maximum sulfur content of 15 parts per million (ppm).



# When Will ULSD be at the Pump? (Nationally)

- Nationally, beginning October 15, 2006, ULSD will generally be available at retail outlets.
- Between 2006 and 2010, both ULSD fuel and Low Sulfur Diesel fuel will be offered for sale with some diesel fuel outlets carrying both fuels and others choosing to sell only one or the other
- By December 1, 2010, all highway diesel fuel offered for sale must be ULSD.
- For non-road, locomotive, and marine diesel fuel, there is a transition period through 2012



# When Will ULSD be at the Pump? (California)

- In California, beginning September 1, 2006, all diesel offered for sale onroad and offroad must be ULSD.
- Beginning January 1, 2007, all locomotive and marine diesel in California must be ULSD

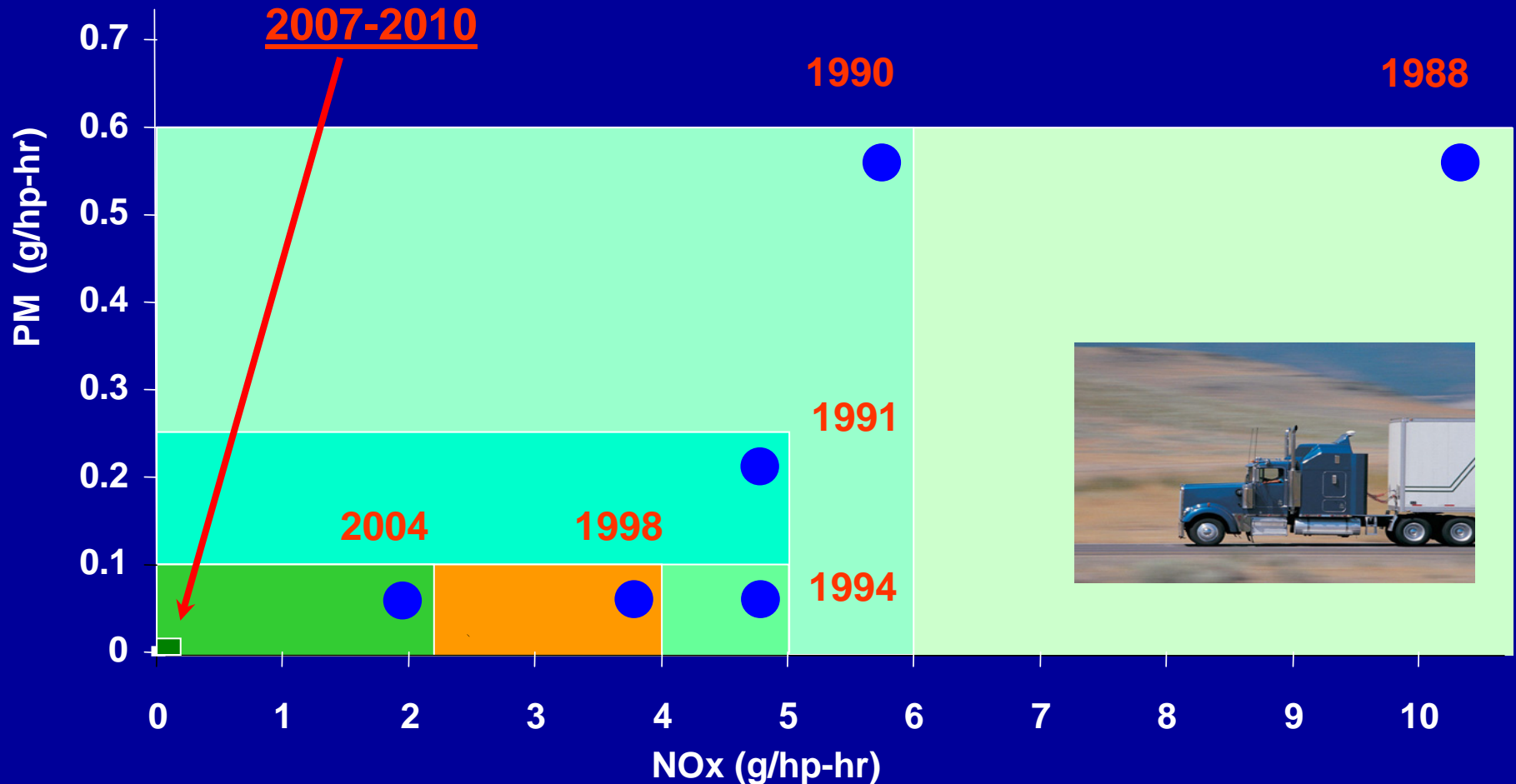


# Key Elements of the Engine & Vehicle Program

- Applies new NO<sub>x</sub>, NMHC and PM standards to heavy-duty engines and vehicles
  - 90%+ emission reductions—gasoline-like levels
  - Based on high efficiency emission control devices (like particulate filters)
  - New engines need ULSD to operate

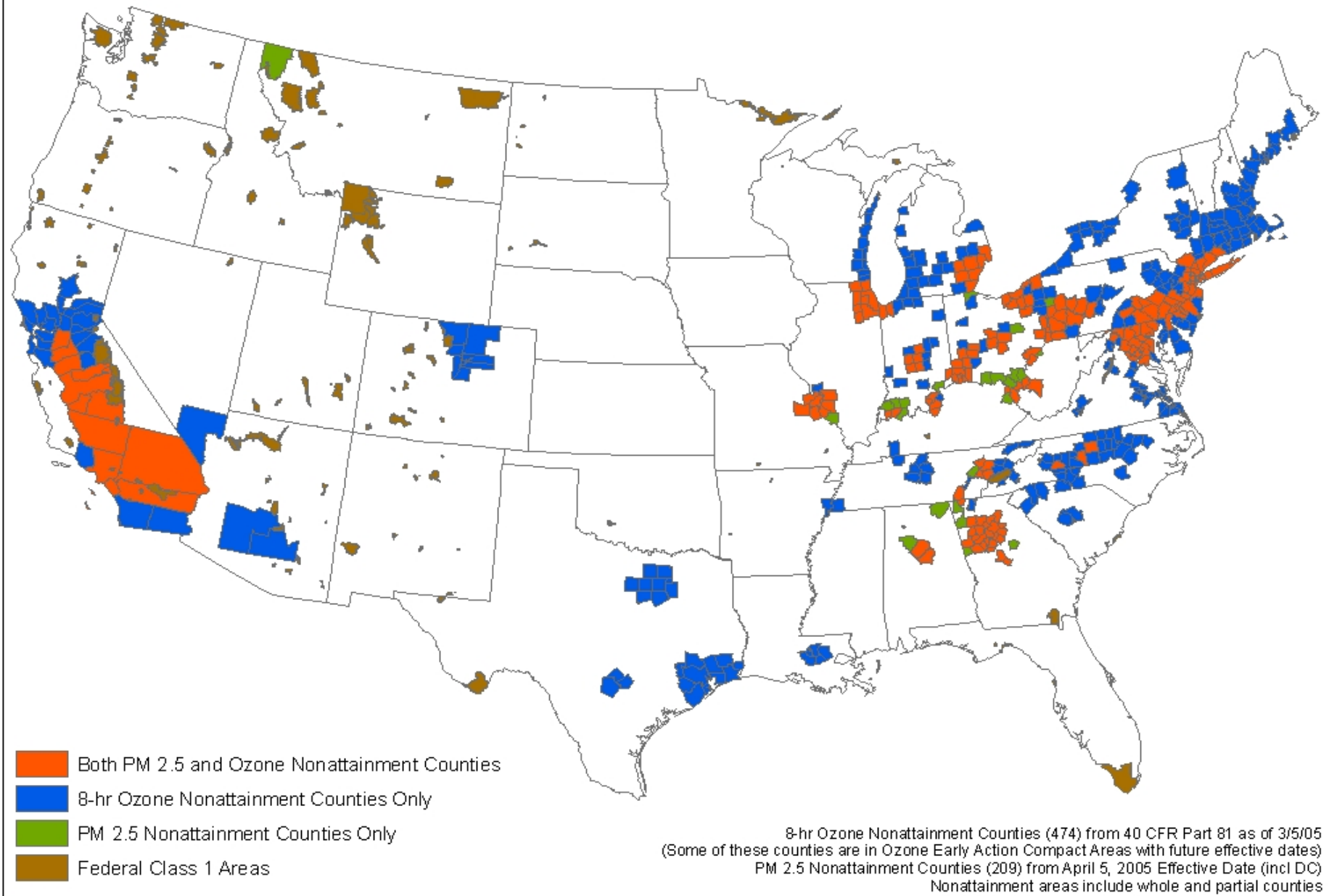


# Highway Heavy-duty Diesel Standards

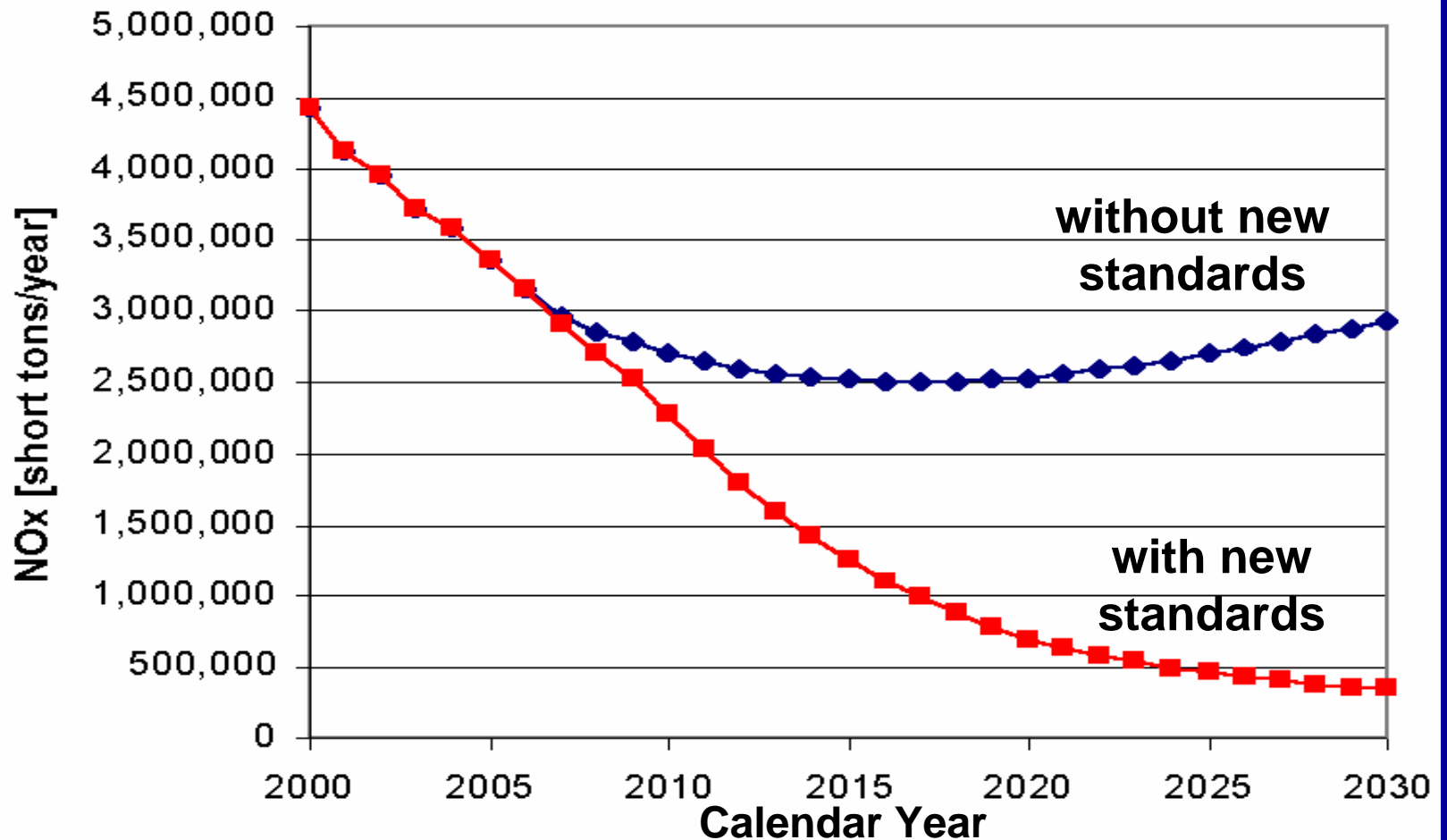




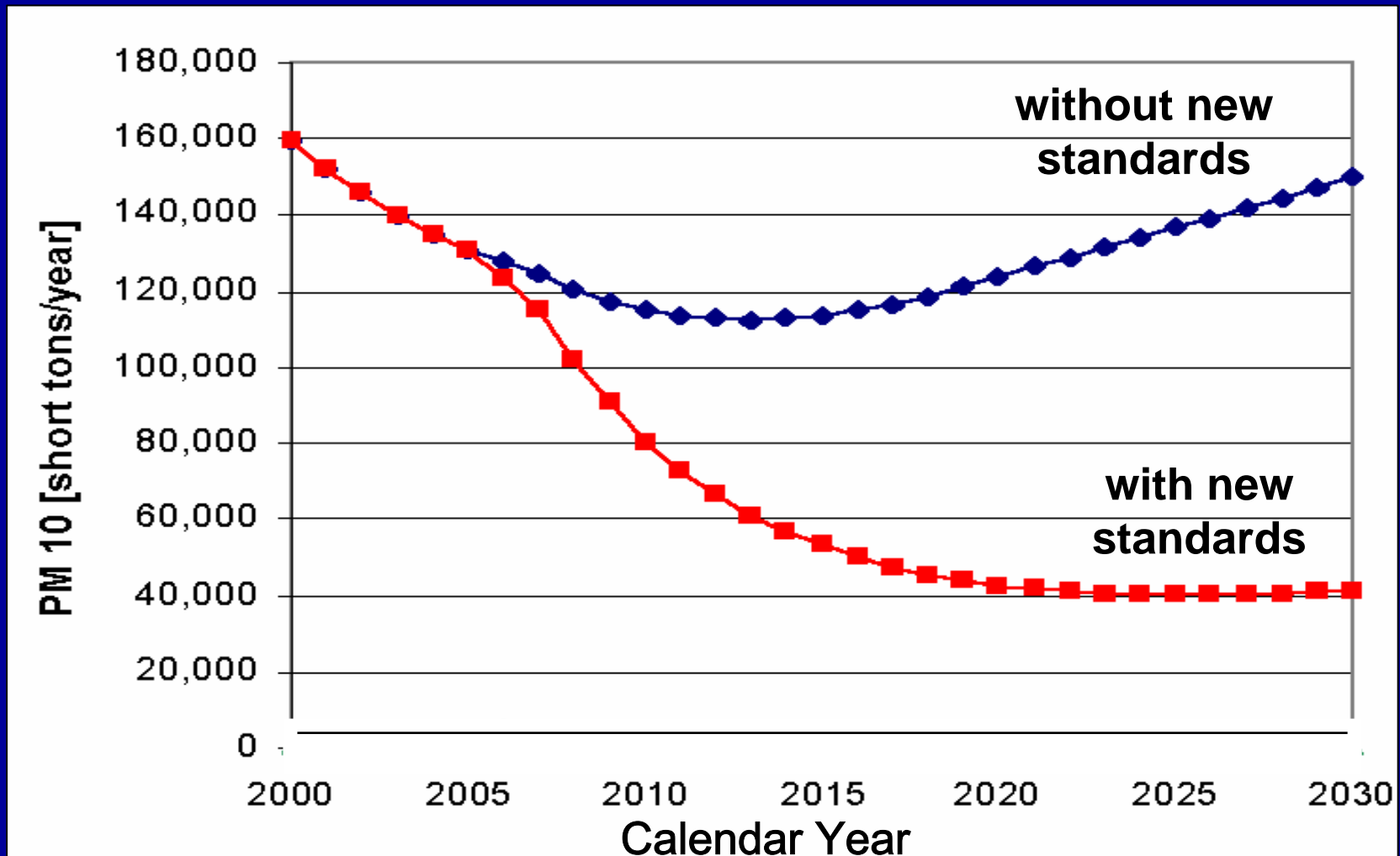
# Persistent Air Quality Issues



# Nationwide Heavy-Duty NOx Emissions



# Nationwide Heavy-Duty: PM Emissions



# National Health Benefits

- After full implementation of the ULSD rule and the engine rule:
  - Prevention of 8300 premature deaths, 5500 cases of chronic bronchitis, and 17,600 cases of acute bronchitis in children
  - Annual reduction of 360,000 asthma attacks, 386,000 case of respiratory symptoms in asthmatic children
  - Annual prevention of 7100 hospital visits and 2400 emergency room visits

# For More Information

- U.S. Environmental Protection Agency
  - [www.epa.gov/otaq/highway-diesel/index.htm](http://www.epa.gov/otaq/highway-diesel/index.htm)
- Clean Diesel Fuel Alliance:
  - [www.clean-diesel.org](http://www.clean-diesel.org)
- California Air Resources Board
  - <http://www.arb.ca.gov>